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UNITED STATES DEPARTMENT OF AGRICULTURE

FOREST SERVICE

REGION 6 FIRE ANALYSES

Wolf Creek, McAllister Creek, Marks Creek Fires, Ochoco National Forest

Fourth of July Fire, Wenatchee N.F.

U.S. GOVERNMENT PRINTING OFFICE : 1968 O—298-607

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UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE

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REPLY TO: 5190 Management June 12, 1969

SUBJECT: Fire Analyses, R-6

TO: Regional Forester, R-6

Your analysis reports on the two Regional Fire Analyses which you did last winter, have been studied by our staff with much interest. We appreciate the opportunity to review these reports.

An appreciable amount of the Ochoco's own analysis of their situation sounds more like excuses or alibis than reasons. There is much that can be done locally to make the fire danger system best serve our needs. This includes improved location of danger stations, recognizing herbaceous stage changes, and making manning plans to fit needs based on experience locally with danger measurement. It is surprising to hear the Ochoco didn't seem to know about the drought buildup and critical conditions, generally, in eastern Oregon early in 1968 after all that was made of these conditions nationally. It is regrettable that the new programmed lesson plan on radio practices is only now about to be available. We trust it will receive maximum use as we believe it can do much to improve these practices where applied effectively.

We trust new equipment and techniques have been made available for handling frozen meals. We will be interested in learning how the new slide-tape presentation worked out on this training. We are pleased to see you are making plans to go to a planned or "preplanned" automatic dispatch system. This has been found to be particularly effective in high value and/or high hazard areas. R-1 will be testing a low-cost, low resolution infrared scanner this year which, if successful, can be used widely in 1970.

Your extensive training program this past spring should have brought to fire overhead in the region the deficiencies of 1968 and needs of the future. Many of the deficiencies were the type that are all too common on large fires and illustrate the need for strong preparations and management controls. Your new dispatch policy should help to assure air tankers being available for critical periods such as the start of the 4th of July fire.

Dick Millar will be looking for evidences of strengthening efforts and accomplishments of your action plan when he makes the GFI of R-6 in August.

Merle S. Lowden

MERLE S. LOWDEN
Director of Fire Control

MSLowden:rks

UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE

Region 6
P.O.Box 3623,Portland,Oregon 97208

REPLY TO: 5190 Management

April 11, 1969

RECEIVED U.S.F.S.
APR 15 1969
FIRE CONTROL

SUBJECT: Fire Analyses

TO: Chief

In accordance with instructions in FSM 5194.12, we are enclosing copies of analysis reports on Regional Fire Analyses held this past winter on two of our 1968 large fire situations. The first is an analysis of the three Ochoco NF fires which occurred on July 5 and the second is on the Fourth of July Mountain Fire which occurred on the Wenatchee NF in August.

We are also enclosing a copy of the Regional Action Plan covering the analyses findings that had Region-wide significance. A copy of the Regional Forester's memorandum transmitting this action plan to the field is also enclosed.

Any comments you may have on this material would be appreciated.

K. O. Wilson

K. O. WILSON
Assistant Regional Forester
Fire Control, R-6

Enclosures

ANALYSES SUMMARY

MAJOR OCHOCO NATIONAL FOREST FIRES CAUSED BY LIGHTNING STORMS OF JULY 5, 1968

General Information

Two or more lightning storms occurred over parts of the Big Summit and Prineville Districts during the afternoon of July 5. The first storm started at approximately 1455 to the north of Gerow Butte (State), as reported by that station and Pisgah Lookout (F.S.). It was considered light to moderate in intensity with about 15 bolts of cloud to ground lightning reported. For all practical purposes there was no precipitation with any of the storms.

At least 16 fires were started by the July 5 storms including three project fires; Wolf Creek, McAllister Creek and Marks Creek. All but two were discovered within a few hours after the storms and suppression action was taken the same day. The two exceptions, McAllister Creek and Coyle Creek, were discovered in the early afternoon of July 5 at about the time that the Marks Creek Fire escaped from State suppression forces. This latter fire crossed onto Forest Service protected land on a broad front and presented a major suppression problem immediately.

Weather Conditions

The series of fires caused by the July 5 lightning storms occurred at what appears to be the peak of an extended drought period. Precipitation at the Ochoco Ranger Station during the 12-month period 7/1/67-6/30/68 was only 10.90" or 64% of the previous 5-year average. March and April readings were 28% and 9% respectively of the 5-year averages. Precipitation in May was substantially above normal (1.58") but not sufficient to break the drought conditions. Scattered showers in June produced a total of 0.85" of moisture which is less than 50% of the average.

During the early part of July a warm ridge aloft with a thermal trough at the surface existed over much of the Forest. The result was that afternoon temperatures increased daily while humidities decreased.

On the day the fires began, a weak cold front swept through the area during the afternoon. Ahead of the front southerly winds increased to further drying conditions. In the frontal zone, moisture was insufficient to suppress fires started by lightning. The cold front, to be specific, was strong enough to produce scattered lines of dry lightning storms with gusty surface winds to fan fires created by lightning, but not strong enough to produce heavy rainfall for fire suppression.

Post frontal weather reverted back to prefrontal - i.e., warm ridge aloft with one exception: Surface winds remained strong (10-15 mph gusting to 20) for two days or until induced higher pressure at the surface behind the cold front subsided. Therefore, fires on slopes perpendicular to stronger westerly flow were highly vulnerable to crowning and blowup. Temperatures and humidities had changed little from pre-frontal values. Thus, no lowering of BI's could be expected in post-frontal conditions.

In summary, increased wind speeds with flow perpendicular to fire slopes with no lowering of BI's aided in eventual rapid burning on some fires during the immediate two days of post-frontal weather.

Buildup Index Value

Moisture recovery in the soil and in moderate to large fuels last winter was extremely poor. Unusual dryness in March, April and June aggravated these conditions. Calculated BUI on the Big Summit District was 130 on May 1. It increased to 161 by May 12, dropped to 87, rebuilt to 103, and dropped to 37 by June 1. Forest calculated average BUI was 133 on the day of the storms. On a personal judgment basis, the Forest average BUI on May 1 was probably where it was during the latter part of July 1967, or about 200. Buildup increase after that date appeared to be appreciable with only short duration breaks brought on by the low intermittent precipitation.

BUI isn't supposed to measure moisture in "moderate to large fuels!" RBC

Personal judgment and the behavior of our 1968 project fires indicate that fuel moisture conditions were in the very high to extreme ranges. We believe this indicates basic weaknesses in our present system for calculating BUI and that BUI reading on the day of the storms should have been much higher than it was.

However, under our present concept for using BU in interpreting burning conditions, the effect on our actions under the Manning and Specific Actior Guide would have been insignificant.

Herbacious Stage

The Forest Supervisor has the responsibility for determining the herbaceous stage by applying FSM guidelines to vegetative conditions. Guidelines indicate that eastside ratings should be based primarily on the condition of grasses within opening in the timber. In spite of the drought conditions, Rangers reported grasses to be in a green condition during the month of June. Consequently, the Forest carried a transition stage reading until July 1, when we changed to the cured stage.

The change resulted in a substantial increased in BIVs. A reading of 42 on July 3 was well above the Forest's critical BI of 27. On July 5 the reading was 52, well into the very high range. Projecting the cured stage backward for five days indicated that BI readings for the latter part of June were as high as 45. This was contrasted with a high reading of 15 using the transition stage.

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Manpower

A review of our manpower situation forest-wide since 1963 indicates there has been a substantial drop. We had 261 employees in 1963; this dropped to a low of 192 in 1967 and moved up to a total of 199 in 1968. During this period significant reductions were made in the number of project personnel associated with Fire Control work. TSI and BD crews were drastically reduced and there were significant reductions in seasonal fire control personnel. This was partly offset by the presence of smokejumpers at the Redmond Air Center. However, we have found times, especially in the past two years, when jumpers and/or planes were not available. Fortunately, we have not been hurt by this condition but the element of danger is there.

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Because of our reduction in manpower, fire suppression manpower needs has had an (adverse?) impact on the time of project personnel.

Recognizing Unusual Burning Conditions

Protracted periods of high temperatures, low humidities, high BU and BI's and low fuel moisture conditions are commonplace on the Ochoco. Lightning busts of 10, 15, 20, or more fires are not uncommon and dry storms have happened before without disastrous results. Strong erratic gusty winds are common to most of our lightning storms periods. The Forest has managed to cope with these multiple fire situations with minor acreage and resources losses. Rapid aggressive initial action has paid off in the past, but especially in July 1968, this was not enough.

It is obvious now that additional pre-suppression action was needed to cope with the early July 1968 impending fire situation. The major problem was our not having foreknowledge of the condition or conditions, that resulted in the project fires. There must have been some factor or factors of the weather that we were not reading that produced the unusual burning conditions. Identification appears to be beyond our capacity; however, once we understand them we should be able to cope with them in the future.

Dispatching

Dispatching at the Forest level was initially handled in successive shifts by the Forest Dispatcher and the Fire Staff. It was obvious during the night of July 5 that dispatching assistance would be needed to cope with the multiple fire situation including the one major project fire, Wolf Creek. A Fire Order Form was prepared, requesting this assistance, and submitted to the Regional Office.

A three man special Regional Dispatching Team arrived on the Forest at 1600 on July 6. They immediately recognized existing dispatching facilities as being inadequate and proceeded to convert the conference room into a super dispatching room. Phones were quickly installed and two teams developed to provide round the clock dispatching service. Except for minor delays, the dispatching service was excellent.

Communications

During the initial phases of the lightning bust and especially during the blow-up period of the Wolf Creek Fire, there were some communications deficiencies. Two neighboring districts were using the radio system for dispatching at the same time. This resulted in some interference and delays in transmitting fire information. Fortunately no major problems developed, but the experience focused attention on a problem we have been living with for many years.

Inter-District interference in radio communications during lightning bust conditions is a common situation on this Forest. Continuing intensive training in effective radio use and procedure has been carefully followed. Under our usual lightning bust conditions this has been sufficient to get by on. However, we have long recognized the basic weakness of a one-channel system. It can be overcome to a considerable degree by adding a second channel. Using Regional Cache radio facilities is effective for project fire communication services. However, due to lack of relay and base station facilities in the Cache, it is not now able to alleviate our communications deficiencies under lightning bust conditions.

Findingsof the Analysis

1. Our present system for determining the severity of burning conditions is not fully satisfactory. By following the guidelines for calculating Buildup Index contained in the National Fire Danger Rating Handbook, we arrived at a BUI on the day of the fire that was substantially below where it should have been. This resulted in a predicted and measured BI for the day of the fire approximately five points below where it should have been.

2. Present weather observations and predictions of fire danger did not adequately forewarn of the unusual burning conditions experienced on the Forest on July 5, 6, and 7. It appears that some element of fire danger is not being recognized.

3. Herbaceous stage is based primarily on the condition of grasses in clearings. In spite of the drouth conditions, the grass was green during much of June. This put us in the transition stage until July 1 when we changed to cured.

Recommendation #1. The Regional Office should modify guidelines for calculating Buildup Index before next fire season to reflect:

a. The effect of drought conditions on fuel moisture recovery.

b. More realistic attrition and recovery rates for fuel moisture readings based on amounts of precipitation.

Recommendation #2. The Regional Office should modify guidelines for determining herbaceous stage to give more value to the moisture condition of forest fuels and less to the grasses for eastside Forests before next field season.

Recommendation #3. The Region should make a specific study of fire danger conditions that led up to the unusual burning conditions. They should seek to identify the unknown factor or factors involved and identify them for the Forest. Action on this should be started immediately.

Recommendation #4. The Forest and Districts should revise Manning and Specific Action Guides to provide increased preparedness line items for the higher B.I. groups. Line items will provide for power saw closures in snag felling operations; closing industrial operations; alerting or standby of industrial crews, permittees and local ranchers and requesting the R.O. to alert supplemental manpower resources including inter-forest crews and smoke chasing teams. Also consider closures of timber sales and other operations.

4. Dispatching facilities and space in the Supervisor's Office are inadequate for lightning busts or multiple project fire dispatching. Until this year we have "made do", but it is obvious that this was a case of false economy. As a result of last July's project fires, the conference room has been prepared for rapid conversion to a dispatching room. The present dispatching room needs to be enlarged and/or modified to make it more effective for a small fire lightning bust situation.

Due to lack of trained alternate dispatchers, the Fire Staff has been tied down in the Supervisor's Office during critical fire situations. This has prevented him from providing the needed coordination and direction to the field under emergency fire conditions.

The following three recommendations should be accomplished by July 1, 1969:

Recommendation #5. The Forest should provide sufficient space to meet multiple fire dispatching needs. Hookups for basic facilities such as radio and telephone should be provided in advance.

Recommendation #6. Existing facilities should be streamlined to afford more effective use of space and to develop maximum efficiency from the operations.

Recommendation #7. An alternate dispatching team should be designated and trained for service at the Supervisor's Office level to relieve the Fire Staff of this work.

5. Present radio communication facilities are inadequate to cope with a fire bust situation involving two or more Districts. Continued intensive training in procedure and radio use is only a partial solution to the problem. Regional Cache is not able to help us with this situation because it lacks relays and base station facilities. Development of a two channel system appears to be the only practical solution to our problem.

Recommendation #8. The Forest should intensify its training in radio procedure and use. Tight control of use of the Forest's radio system should be effected by the Forest Communication Technician. This is a continuing program that should receive strong emphasis this year.

Recommendation #9. The Regional Electronics Technician should assist the Forest in developing and financing a two channel radio system. Action should be started before the coming fire season.

WOLF CREEK FIRE

History

The lightning storm that started in the vicinity of Hawkins Butte (T. 14S., R. 19E., W.M.) on July 5, 1968, set three fires near that Butte. Two of them burned together to form the Wolf Creek Fire which finally covered 277 acres. The third one, named the Pete Fire, started approximately three quarters of a mile west. It burned approximately 39 acres and after initial attack, was handled by the same fire fighting organization that handled the Wolf Creek Fire.

The Wolf Creek Fire is estimated to have started at 1455 hours. It was observed at about 1505 hours from the vicinity of Prineville airport by the Forest aerial observer, who reported it to Prineville Ranger Station at 1520. At 1510 the fire was observed by two smokechasers who were travelling southwest on the Old Ochoco highway. They reported the fire to the Big Summit Ranger Station and were immediately dispatched to it; travel distance was approximately 1¼ miles by road and 1/8 mile on foot. Initial attack by these two men was at 1522; estimated size of the fire was one acre.

The Big Summit dispatcher ordered 16 jumpers through the Supervisor's Office at 1519. At 1525 the jumpers were airborne and and on their way.

The initial attack crew scouted the fire and started working on the critical spots. Because of extreme burning conditions the fire defied control and continued to spread rapidly. One of the initial attack smokechasers returned to the vehicle on the Duncan Creek Road at 1545 and reported to the Ranger Station by radio. Estimated size 2-3 acres, burning in grass, brush and some reproduction, need 10 men but did not believe retardant plane would be effective.

Six men (all that were available) were dispatched from the Ranger Station at 1547 in addition to the 16 jumpers already underway. Both groups arrived on the fire at 1600. At 1559 the initial attack crew called Ranger Station from fireline and reported they could not hold the fire. They ordered a retardant plane and this order was relayed to the Supervisor's Office at 1604.

District Ranger arrived on the fire about 1630. He estimated its size to be 80 acres and submitted a request for 150 men and an Overhead Team. The District Ranger was immediately assigned as Fire Boss. Other members of the Forest Overhead Team were advised of the fire and by 1950 they were all on the job.

Reinforcements, including manpower and equipment, were quickly mobilized and dispatched to the Fire Camp. Working through the night, the crews were able to complete the fire trail and burning out along the fire perimeter before 1000 on July 6. However, because of unfavorable forecast, the size of the fire, and the presence of unburned interior islands, the Fire Boss elected not to declare the fire controlled until 1000 July 7. The fire was contained and held within the fire trail completed the first night.

Findings of the Analysis

1. A review of Big Summit Ranger District Manning and Specific Action Record showed that one emergency lookout station was not manned, as called for in the Manning and Specific Action Guide. The deficiency had no apparent bearing on the outcome of this fire. Stated reason for this failure to perform was that a trained person to man the station was not readily available.

Recommendation #1. Rangers should train additional people, including women, to take over seasonal and emergency positions on a part time basis to meet emergencies. Action should be started on this before next fire season.

Recommendation #2. Supervisor's Office should check more frequently to insure that Rangers are following Manning and Specific Action Guideline items or substituting alternative action acceptable to the Supervisor's Office. Supervisor's Office to include this item in Fire Control Officer's training conference this spring.

Recommendation #3. Rangers should broaden their training base in Fire Control so that a group of fully trained persons are available for emergency and off season manning. This training should be included as a line item on Form 5100-2, Fire Control Financial and Organizational Plan. Changes should be made before the coming fire season.

2. After the initial attack forces arrived on the fire, they tried to call the Ranger Station from the fireline by handie-talkie but were unsuccessful due to the low power of their set. A repeater for the Ranger Station base station was to have been installed on Round Mountain before the start of the fire season. If this had been in, direct contact could have been made between the fireline and the station. This would have speeded initial ordering of manpower and equipment. Purchasing problems have apparently delayed the procurement of the necessary equipment.

Recommendation #4. The Regional Office should expedite the purchasing of the necessary equipment to install and activate the repeater on Round Mountain. Their objective should be to have the system operational by the start of next fire season.

3. Ground forces were unable to stop this fire the first afternoon, and it is doubtful that any practical measures could have been taken to make them more effective. A retardant plane might have made a difference in the early phases of suppression action. However, none was ordered until approximately one hour after the fire was first reported. A retardant plane from the Redmond Air Center could have been over the fire in 15 minutes after take-off. An automatic dispatch procedure for air tanker service may have made the difference in controlling this fire.

Recommendation #5. The Forest should modify its Mobilization Plan to provide for automatic dispatch of an air tanker in a fire situation when the BIV is over 40 and two or more fires are detected.

4. Both the direct and parallel methods of attack were used on this fire with the fire trail generally following or paralleling the fire edge. Line scouts were not used because of the shortage of manpower while dozers were constructing the fire trail. Consequently considerably more fire trail was built to corral the fire than was necessary. The extra time employed could more effectively have been applied to burning out and mop-up. Discussion in our three fire analyses leads us to believe this is a Regional problem.

Recommendation #6. Overhead training sessions should emphasize the need for use of line and general scouts. Emphasis should be given this point at all simulator and fire overhead training sessions. The Regional Office should provide the leadership in this effort before the start of next fire season.

Recommendation #7. On the Forest training sessions in scouting instructions should be started this year. Our objective should be to have at least two trained Line Scouts per District before the start of next fire season.

Recommendation #8. The Forest should include line building techniques and burning out fundamentals in its industrial crew training sessions this coming spring.

MCALLISTER CREEK FIRE

History

This fire, which was controlled at 315 acres, was started by one of the July 5 lightning storms. In spite of intensive aerial and fixed detection coverage, the fire did not show until 1310 on July 6. It was first observed by Pisgah Lookout and reported to the Ranger Station as a spot fire. A cross-shot was obtained from Round Mountain Emergency Lookout within two minutes. Both lookouts described it as being a spot fire.

Five men with a one ton pumper were dispatched to the fire at 1312. At this same time an order was relayed to the Supervisor's Office for 16 jumpers and a retardant plane for reinforcements. The Forest Aerial Observer on patrol in the vicinity of Lookout Mountain was directed to the fire vicinity. He assisted the ground forces in taking the shortest route to the fire. At 1320 two additional men were dispatched to the fire, one to take over as fire boss. Supervisor's Office called and reported jumpers were on the way, but no retardant plane was available. At 1325 the Aerial Observer called from the vicinity of the fire and reported it was crowning and spotting over a ridge to the northeast of the point of origin. The initial five man crew arrived on the fire at 1330; they reported in and advised that the fire was real bad.

Fire Boss Crewdson and one man arrived at 1345; he was advised that jumpers and a retardant plane, diverted from a State fire, were on the way. Ranger Robinson scouted the fire by helicopter at 1350 and estimated it to be from 50 to 100 acres in size, he estimated the potential size to be from 300-400 acres. Robinson ordered bulldozers at this time.

Supervisor Sullivan and Fire Staff Wick arrived at the fire about 1340 from the Wolf Creek Fire. Sullivan left shortly after for the Marks Creek Fire on State protected land which appeared to be threatening our protection boundary. Wick scouted the south and west portion of the fire and at about 1400 met with Crewdson and jointly developed a plan of action. An order was placed at 1405 for an Overhead Team, 100 line workers and necessary camp facilities.

Manpower and equipment arrived promptly and were employed aggressively in suppressing the fire.

Frank Mauger was dispatched to the fire from the Supervisor's Office about 1500. He scouted it from a helicopter until 1545 when he landed near the fire and contacted Wick. In the meantime Supervisor Sullivan returned to the fire vicinity. He assigned Mauger as Fire Boss at 1630; then he and Wick left for Prineville.

Work on the fireline continued under Mauger's direction. Line forces included 38 men and 3 dozers. At 2130 the line construction was reported as being completed; burning out was in progress.

Supervisor's Office dispatcher called at 2215 and asked to have Crewdson, 10 men and 2 tractors sent to the State fire camp for work on the Forest Service portion of the out of control Marks Creek Fire. At 2245 the men and one tractor were dispatched to the Marks Creek Fire; a second tractor was dispatched at 2345.

The remaining 28 men and one tractor continued work on the McAllister Creek Fire.

Subsequent to Mauger's being assigned as Fire Boss the initial overhead team ordered for McAllister was diverted (1900) to the Marks Creek Fire. Mauger checked with the Supervisor's Office three times on the anticipated arrival time of overhead replacement and additional manpower. His second check was made shortly after midnight and apparently resulted in the reorder for an overhead team for the McAllister Creek Fire. At that time he was advised he would not be relieved until the day shift. He did not request overhead and manpower assistance for the night shift because he was certain they would not be available before the relief overhead came in.

Mauger obtained one man from the Ranger Station to act as Line Boss. Mauger is qualified by training and experience to qualify as a Fire Boss-2, but the other man is not qualified as a Line Boss. Because of a lack of in-camp support personnel, Mauger was not able to get out on the line to supervise work and insure that it was being properly done. Consequently Sector Bosses Doug Ashcraft and Jim Brain directed operations on the line for the night shift.

Three 25-man relief crews arrived at the Fire Camp in the early (0400, 0445 and 0615) hours of the morning. Due to messing difficulties they did not relieve line workers until 0730. Delays were due to:

(1) Lack of gas for butane stoves.
(2) Lack of skill in preparing frozen meals.
(3) Difficulties experienced in keeping stoves going under strong wind conditions.

0700 Crew Leaders were given instructions by Mauger and sent to the line to relieve night workers.

Relief Overhead arrived at 1030 and after briefing took over the fire. Fire Boss Curt Swanson and Line Boss Jerry Brown started an immediate inspection of the fire. They found one crew that was bunched up and poorly supervised and a place in the head of McAllister Creek where the fire trail was not completed for a distance of about 300 yards. The fire jumped over the original control line in this vicinity. Immediate action was taken to provide supervision for the crews and to complete the fire trail and burn out. Crews were able to hold the fire during the heat of the day. By 1800 hours the Fire Boss listed the fire as being under control. No appreciable acreage was lost after the line was completed at 2130 on 7/6/68.

Findings of the Analysis

1. One lookout, Mt. Pisgah, viewed the fire area vicinity on 7/5 while on 7/6 Round Mountain Emergency Lookout was also manned. Intensive aerial detection coverage was provided on both days. However, the smoke was not detected until 1310 on 7/6. In spite of the rapid agressive action taken by initial attack forces, the fire blew up and raced to project size in less than one hour's time after discovery.

Recommendation #1. The Regional Office should investigate the feasibility of obtaining a simplified inexpensive version of the infra-red scanner for use at the Forest level for detecting sleeper fires.

available

Recommendation #2. After a lightning bust and under critical burning conditions, intensive helicopter aerial observation services will be provided for the storm area for a period of at least three days. Include as a requirement in the 1969 Forest Mobilization Plan.

2. An overhead team and line workers were ordered for this fire at 1405, 7/6. The original team ordered was diverted to the Marks Creek Fire. A second overhead team was not ordered until several hours later. As a result, the new Fire Boss and his Line Boss didn't get on the fire until 1030 on 7/7. Also, the night Fire Boss did not visit the fireline because of the need to get the in-camp jobs done. Line supervision during the night shift was adequate. However, the relief crews were sent out under overall control of their respective leaders with no qualified Sector, Division or Line Boss to direct them. The crew on the northeast side of the fire bunched up and failed to reach the critical upper portion of the line until after 1030.

The night Fire Boss did not request additional overhead and manpower for the night shift because he was certain none were available. The manpower ordered for 2100 July 6, did not arrive until the early hours on 7/7. Several obstacles delayed getting men out on the line:

(1) Camp stoves arrived without any gas.

(2) Trays for the frozen food steamers were not on hand.,

(3) There was a lack of camp personnel so the Fire Boss and other key personnel had to handle this phase of the job at the expense of the normal jobs.

(4) Persons preparing frozen meals were not familiar with techniques for steaming them (this was the first year for using frozen meals on the Forest. As a consequence, preparation time was about double what it should have been.

Supervisor's Office Dispatchers were aware of the diversion of the original overhead team to the Marks Creek Fire, because they changed the Fire Order Form to effect the transfer. However, they were busy getting organized, oriented and equipped for a multiple project fire situation. Consequently they overlooked the need for the re-order of Overhead for McAllister Creek Fire. The Fire Staffman was on duty at this same time, but he overlooked the need for re-ordering overhead. Part of this shortcoming was due to the fact that he was involved in too much of the detailed work of dispatching and organizing for the suppression job. He should have concentrated on the more important jobs of coordinating and directing the overall multiple fire effort.

Recommendation #3. Fire Staffman should not become involved in detailed matters such as dispatching or organizing suppression action on individual fires that take him away from his primary job of coordinating and controlling the total fire suppression effort. Provisions for relieving him of routine jobs such as dispatching should be made before the next fire season.

Recommendation #4. The Regional Office should develop faster means of mobilizing and of transporting crews to fires.

Recommendation #5. The Forest should train service personnel in the use of frozen food preparation techniques. They should also set up an automatic dispatch order for bottled gas for the stoves. Actions should be completed before the coming fire season.

Recommendation #6. The Central Cache should provide wind shields in the propane gas stove kits used with the frozen food steamers. These shields should be added before next fire season.

Recommendation #7. The Forest should emphasize in its overhead training sessions that the primary responsibility of overhead personnel, especially the Fire Boss, is to insure that all of the varying parts of the total job are being accomplished.

Recommendation #8. The Forest should provide double lunches or emergency rations to all fire fighters to carry them over the period when the fire camp is being established and before messing facilities are fully operational. The Regional Office should make certain that other forests are aware of this recommended practice.

MARKS CREEK FIRE

History

Marks Creek Fire started by a lightning strike from the first storm of July 5. It started on State protected land at a point approximately 1½ miles from our protection boundary. The State took initial suppression action and contained the fire that day at 40 acres.

At about noon on July 6, District Forester Christiansen, State Forestry, called the Ochoco Forest Dispatcher and requested assistance in the form of a tractor with operator, or a tractor operator for this fire. The Dispatcher advised that we had nothing available. At approximately 1400 Christiansen called again and advised that they had lost the fire; he again asked for assistance and was advised that we had none. A subsequent analysis revealed that resources from at least one of the local operators and a road contractor were not committed to any fires.

At about 1415 July 6, Supervisor Sullivan called Christiansen from Ochoco Ranger Station and confirmed that the Marks Creek Fire was burning out of control. It was either on, or threatening Forest Service protected land. Sullivan offered assistance but at that time it was too late to stop the fire.

An Overhead Team, the one initially ordered for the McAllister Fire, was assigned to this fire in the early evening (approximately 1900). The initial order was made at 1405. At 1450, Fire Boss Maxwell received the word from the Regional Office and started rounding up his team. His regular Service Chief was not available, so an alternate, Bob Larse, had to be obtained. Maxwell and Line Boss Wilson arrived at Ochoco Supervisor's Office at 1825; Plans Chief Shipek and Finance Chief North arrived at 2130, while Service Chief Larse arrived at 2300. Because of their late arrival, Larse, Shipek and North missed out on the coordination and planning meetings between the Forest and the State.

The first meeting with the State was held at 2000 in the Ochoco Supervisor's Office with Forest Service Fire Boss present. A second meeting was held at the State Office at 2200 with the State and Forest Service Fire Bosses present. A joint plan was developed and agreed on for a two zone fire with each agency basically directing suppression action within its own protection boundary. A two man liaison team was designated and a formal agreement between the agencies prepared and signed.

During the initial meeting with the State, a plan was developed for moving Forest Service manpower and equipment onto the Forest Service portion of the Fire for night work. Arrangements were made for a State guide to meet Forest Service personnel at State Fire Camp and guide them to the line. Forest Service personnel were dispatched to the camp, but they were not able to locate their guide and consequently did not reach the fire that night.

Shortly after the McAllister Creek and Marks Creek Fires blew up, Fire Boss Robinson on the Wolf Creek Fire advised the Forest Dispatcher of manpower and equipment resources available for dispatch to other fires. Maxwell's team was later advised of the availability of these resources, but no Fire Order Form was issued. When Maxwell's Overhead Team arrived at Wolf Creek Camp at 0130, personnel awake in the camp were unaware of the plan for shifting resources. It came out later that the Wolf Creek Overhead were not aware of these changes and they were also not aware of the fact that they were to provide breakfast and equipment for 200 additional men. Marks Creek Service Chief assumed that all arrangements for the change-over had been made. So when he could not find the Wolf Creek Service Chief he went to bed. It was not until about 0530 on July 7 that he learned that the arrangements had not been made. Consequently, the Marks Creek Service Chief was not able to manpower and equipment on the Marks Creek Fireline until mid-morning.

Scouting information provided the Overhead Team was obtained from State Forestry personnel. It proved to be extremely general in nature and of little or no value in orienting Forest Service Overhead to conditions on the ground. Maps provided by the Forest did not include detail on non-system roads in Marks Creek Fire area. Consequently, the Overhead Team had to obtain its own basic intelligence on the fire and burning conditions in its path.

Coordination between the State and Forest Service was generally good. Respective Overhead Teams agreed on an overall plan and general location of zone boundaries. Forest Service line Overhead made contact with their State counterparts and identified working boundaries on the ground. A two channel radio system was used with the State and Forest Service crews using separate channels. Interagency communications was had by changing channels.

at least some cases on July 7, vehicles used to transport men to the line remained in the fire vicinity. This was due in part to the fact that Wolf Creek Fire Camp had not received advance notice of specific plans for manning and equipping Marks Creek. Four of these vehicles were trapped and destroyed by the fire in the afternoon of July 7. Essentially, what happened is that the fire blew up in the State's northwest division. It flanked their line as well as that of the adjacent Forest Service division. The Forest Service Division Boss had to call the State Division Boss to confirm that this was happening. By that time it was too late to safely move the vehicles from the path of the fire.

Other parts of the fire blew up at about this same time and the fire moved rapidly in a northeasterly direction. All line personnel were safely moved out of danger. They quickly regrouped on both sides of the open end of the fire and started flanking attacks. Excellent coordination was obtained between the air arm and ground forces in the late afternoon and early evening. This was in spite of the fact that the air attack boss experienced considerable interference on the airnet radio from other fire areas as well as from several airnet repeaters in the State.

Approximately 700 acres of recently-thinned young growth was destroyed by the blow-up of July 7. The intense heat created by the burning of large volumes of fuel in these thinned stands contributed significantly to the extreme volume of heat generated by this fire. This in turn increased the potential of the fire for spotting ahead, but it was not the cause of the initial blow-up. The blow-up occurred in what would be classed as a Residual Pine stand which had been cutover prior to 1950. Fuel created in the logging was considered to have returned to normal. It was rated MM.

Taking advantage of natural breaks in topography and fuel, the crews, working through the night, were able to control the fire by 1000 hours on July 8.

Findings of Analysis

1. Due to the facts that the fire initially was considerably outside our protection boundary and reported to be contained, we did not keep apprised of its condition. As a consequence, when the State lost the fire we were unprepared to immediately participate in the suppression effort.

> Recommendation #1. The Forest Supervisor should revise the Mobilization Plan to provide for liaison on all fires presenting a threat to Forest Service protected land.

2. Prior to the blow-up on July 6, the State requested assistance from the Forest. We advised that help was not available, but later determined that it was. As in the past, we used the Mobilization Plan from which to dispatch manpower and equipment. This practice does not provide a good means of maintaining a graphic picture of the status of manpower and equipment resources. It also falls short in the area of coordinating the use of resources between the three agencies in Prineville.

> Recommendation #2. The Forest, in coordination with the State and BLM, should develop and maintain a manpower and equipment resource board to present a continuing picture of their status. Similar boards should be maintained in each office. This program should be initiated this spring.

3. Transfer of manpower and equipment from Wolf Creek to Marks Creek was done on an informal basis. Not all persons involved were advised of the transfer and as a result a plan for an orderly and expeditious change was not developed. This contributed materially to the delay in getting the Forest Service's portion of the Marks Creek Fire manned on the morning of 7/7. It also contributed to the confusion in obtaining control of passenger carrying vehicles. If all changes planned had been put into effect by use of Fire Order Forms, these problems could have been at least partially alleviated.

Recommendation #3. Use of Fire Order Forms should continue to be stressed in all overhead and dispatcher training sessions this coming spring. Special emphasis should be given to this requirement in all Service Function training sessions.

4. Communications between the State, BLM and the Forest has been good under usual fire emergencies experienced in Central Oregon. This year the presence of project fires, especially on the Forest, produced unusual conditions. In at least two instances, communications between the State and the Forest were not effective. We understood the State was to provide a man to guide Forest Service personnel and equipment to the line on the night of 7/6. The Forest Service overhead sent to the State Fire Camp was not able to make the contact. Interagency communications on the line during the midday of 7/7 failed to warn of the developing blow-up on the State's northwest division until it was too late to safely evacuate four vehicles.

Recommendation #4. The Forest should continue to work with the BLM and State to strengthen interagency communications and coordination in Fire Control Management. This should be a continuing program.

5. During State or Regionwide multiple fire situations serious problems develop over the heavy use of the Air Net frequency. There was much interference from outside sources during and following the blowup of the Marks Creek and McAllister Creek Fires on 7/6. Air to ground coordination was obtained, but at times this was done only with extreme difficulty.

Recommendation #5. The Regional Office should provide another Air Net frequency to permit localized air to ground communications with less interference. Action should be started immediately on this.

6. Some of the Overhead were late in arriving at the Supervisor's Office and consequently missed the two coordination meetings with the State. Part of this was due to the time needed to contact and advise team members. Another part was due to the fact that an alternate Service Chief had to be called in. These late arrivals contributed to the inability of the Overhead to get manpower and equipment on the fireline in the early hours of the morning.

Recommendation #6. The Regional Office should develop a procedure for having a Top Overhead Team or Teams "on call" or "on standby" when burning conditions over one or more forests become very high or worse.

Recommendation #7. The Regional Office should re-emphasize the need for returning all vehicles to fire camp immediately after delivery of line personnel to the line. This practice should be stressed in all Line and Service overhead training sessions this year.

UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE

Region 6
P.O.Box 3623,Portland,Oregon 97208

REPLY TO: 5190 Management

April 10, 1969

SUBJECT: Fire Analyses of 1968 Fires

TO: Forest Supervisors and Division Chiefs

REPORTS DUE JULY 10 AND
MARCH 10, 1970

Last winter, the Region analyzed the action on two of the larger 1968 fire situations. One was of the three larger fires on the Ochoco during the period July 5 to 8, and the other the 4th of July Mountain Fire on the Wenatchee in August.

These analyses uncovered several ways where the individual Forests involved could improve their fire management. They are taking the necessary steps to do this. In addition to this, there were a number of measures the Region needs to do to strengthen the overall fire control activity. Some of these will be done by the Division of Fire Control, others are Forest jobs.

The Division of Fire Control has developed an action plan designed to accomplish the Regionwide strengthening of the fire control activity. It has my approval. Target dates are set for accomplishing some of the work. Reports are called for on this. Other parts should be done during fires, and will be checked on by the inspection process.

On those jobs calling for completion by July 1, please have your report in by July 10; and by March 10, 1970, for those to be completed by March 1, 1970.

CHAS. A. CONNAUGHTON
Regional Forester
Region 6

Enclosure

A REGIONAL ACTION PLAN TO STRENGTHEN FIRE CONTROL MANAGEMENT IN REGION 6 AS A RESULT OF REGIONAL FIRE ANALYSES OF 1968 FIRES

1. Strengthen the present Fire-Danger Rating system by considering the following:

   a. Incorporating a drought index.

   b. Changing present method of determining and using Buildup.

   c. Modifying guidelines for determining herbaceous stage.

   Fire Control to consider by July 1969

2. A strong effort should be made to reduce special fire hazards on private lands we protect. This to be done by:

   a. Seeking voluntary cooperation by private owners in removing old structures and other hazards.

   b. Contacting county courts and exploring possibility of developing county ordinances relating to special hazards.

   c. Working with States and other Protection Agencies to establish rules governing establishment of new subdivisions in forested areas.

   Forests to work with owners and counties by March 1970

   Fire Control to work with States and others by March 1970

3. Move as quickly as possible to a preplanned dispatch system Regionwide. Plan to consider fuels, burning conditions, and priority of dispatch:

   Forests to consider by July 1969

4. Broaden training base to make certain that every employee that works in the woods is trained in being careful with fire and in basic firefighting fundamentals. Refer to FSM 5134.03 - Policy and R-6 Supplement No. 33 for authority to give basic fire training to all new men and charge costs to whatever appropriation and activity the men are financed under.

   Forests to do by July 1969

5. Develop a dispatch priority for all inter-Forest fire control facilities. Give consideration to maintaining coverage to areas depending on these facilities during periods of high fire danger.

   Fire Control to do by July 1969

6. Emphasize training of line and general scouts in overhead training sessions. Use ground scouts to supplement aerial scouting on all fires.

   Forests to train by July 1969

7. Consider some type of intensive detection of high risk areas during periods of severe burning conditions to pick up sleeper fires while small.

   Forests to list helicopters or other means of intensive detection for high risk areas in their Manning and Action Plans by July 1969

   Fire Control to investigate feasibility of obtaining simplified, inexpensive infrared scanner equipment by March 1970

Both Beltsville & research working on this.

8. Emphasize organizing and training all local manpower for use on fires. Investigate sources such as summer schools, summer camps, farm workers, loggers, and other industrial crews. Use these before calling for help from distant, outside sources.

   Forests to organize and train by July 1969

9. Use more local experienced personnel in Top Overhead teams. Positions such as Fire Behavior Officer, Line and General Scouts, and Maps & Records Officers should be filled by locals.

   Forests to do during 1969 Fire Season

10. Re-emphasize use of division-sized fire camps well located around the perimeter of large fires to avoid the confusion and delays that result from large camps.

    Forests to emphasize in overhead training by July 1969

11. Discourage construction of <u>backup firelines</u> except under very unusual conditions.

    Forests to cover in training sessions by July 1969

    Fire Control to inspect performance during 1969 Fire Season

12. Analyze present size and location of fire caches to see if they best meet Regional needs. It is very costly to return tools and equipment to Redmond from Northern Washington Forests for storage and reconditioning.

    Fire Control to do by July 1969

13. Train Service personnel in preparation of frozen meals and investigate ways to make more economical use of this facility.

    Forests to train in preparation by July 1969

    Fire Control to investigate possibilities of bulk serving and obtaining more variation in meal contents by July 1969

14. Provision should be made to supply fire crews with double lunches or C-rations so there will be no delay in getting on the line if the fire camp is not prepared to serve meals when the men arrive.

    Forests to do during 1969 Fire Season

15. Make it clear to smokejumper bases that the decision whether or not to jump on fires must be made by the Fire Boss on the ground unless there is a question of safety in jumping.

    Fire Control to do by July 1969

16. Liaison Officers must be assigned quickly whenever fires appear likely to burn on both sides of a protection boundary.

    Forests to do during 1969 Fire Season

17. Consider developing and maintaining joint manpower and equipment boards when two protection agencies are depending on the same firefighting resources.

    Forests to do by July 1969

18. Adopt a Service requirement to return all crew-carrying vehicles to camp after they deliver men to the fireline.

    Forests to emphasize in training by July 1969

    Fire Control to cover on inspection trips during season

19. Develop a procedure for alerting Top Overhead teams to avoid long assembly delays when their services appear eminent.

    Fire Control to do by July 1969.

20. Consider developing a standard provision in contracts requiring a small pump and hose for use on roadside fires where water sprinkling is common practice in road maintenance.

    Fire Control to do by July 1969

21. Conduct training in the operation of a GHQ organization.

    Fire Control to do by July 1969

22. Provide time for smooth overlap when replacing Fire Bosses and teams. New overhead must be thoroughly briefed and made completely familiar with conditions.

    Forests to do during 1969 Fire Season

4th OF JULY FIRE ANALYSIS

4th OF JULY FIRE ANALYSIS
WENATCHEE NATIONAL FOREST

Background Information:

This fire began August 4, 1968, on the Chelan District of the Wenatchee National Forest and was finally controlled August 11, 1968, having burned 27,120 total acres of which 8,000 acres were National Forest.

Burning conditions prior to the fire and during burning were severe. Buildup indexes in the fire area were slightly above 350 and burning indexes during the burning period were as high as 55. Fuel types were H and E rate of spread over most of the fire area. A frontal system passed through the fire area a few hours after the fire began pushing the fire from approximately 100 acres to over 12,000 acres in the span of about eight hours during the first evening and night.

The fire was started in an old abandoned building, at the foot of 4th of July Mountain, by persons unknown. Slopes run from 70 degrees to vertical in this area with an elevation change from 2,200 feet at point of origin to 3,600 feet at the summit of the mountain which is one-half mile away.

Detection and initial attack were according to standards or above.

On August 5, 6, and 7 the fire lines could not be closed and the fire burned eastward through approximately 3,000 acres of logging and timber stand improvement slash on Forest Service land. The fire was finally contained on August 9 and declared controlled on August 11.

A two zone, G.H.Q. organization was established the morning of August 5. Over 1,300 people were involved in the fire out of which 880 were line workers.

The safety record was very good and no serious disabling accidents occurred. The bulk of the line workers were organized Forest Service or cooperator crews.

An analysis was held on the Forest to discuss problems encountered with the fire and again with the Regional Forester and Staff. Findings from the analyses are as follows:

Management Situation:

Over 19,000 acres of the burned area were private land, all of which are under protection by the Forest Service. Adjacent to the fire area are approximately 90,000 acres of other private land all under Forest Service protection. From 1930-50 the Forest protected many thousand acres of private land in the area around the city of Chelan. Then for a few years prior to 1961, this block of private land along with approximately 10,000 acres of Forest Service land was under State protection. The State provided one man and pumper located at the Forest Service Ranger Station for prevention and suppression. Because of the flashy fuels and low level of protection by the State in this area, the Forest Service had to take action on most of the fires in this area to protect National Forest lands. Rather than duplicate efforts in this area, the Forest Service and State worked out an exchange of protection responsibilities whereby the Forest Service protected all the lands around the foot of Lake Chelan and the State provided protection on scattered Forest Service lands on other Districts and Forests in the State.

Recommendation #1:

The Forest and Region recognize the fire responsibilities of the State and other agencies when determining fire protection boundaries. An all-out effort should be made, area by area, to encourage logical protection agencies to increase their abilities to proper levels rather than gradually taking over when weakness occurs.

Management Situation:

The weather conditions prior to and during the fire were very severe. The snow pack the winter preceeding was below normal. Rainfall during the spring and summer was below average. Humidities were running below the normal prior to the fire. All of these drought and drying factors were incorporated in the

fire danger rating system now in effect as outlined in guides. However, most of the experienced fire people agreed the fire appeared to burn more severely and rapidly than the burning index would lead one to expect. It was generally agreed the present fire danger rating system which is primarily the spread phase of fire danger rating is not giving fire managers a true picture of fire conditions in drought years. Additional manning pre-fire and during the fire probably was justifable if the true fire conditions were evaluated properly.

Recommendation #2:

The Regional Office consider ways to incorporate drought conditions into the existing fire danger rating on an interim basis until the National Fire Danger Rating System is fully developed for field use.

Management Situation:

The fire started in an old abandoned cabin on private land inside the Forest Service protection boundary. The Chelan Ranger District has a very active prevention program in effect in the area, but no emphasis has been placed in the past on encouraging landowners to destroy or remove this type of hazard. The Forest has a large number of similar abandoned structures on private land inside and closely adjacent to the protection boundary. These old structures are very attractive to a large number of recreationists, and future fires from this source can be expected. No State laws or county ordinances give us the authority to require removal of this type hazard. However, through persuasion with local owners we believe several could be encouraged to take action and remove these structures.

Recommendation #3:

The Forest give recognition to this type of hazard in District prevention plans by recognizing old structures as a hazard and encourage landowners to remove or destroy them.

Recommendation #4:

The Forest request the State and local fire protection districts to take similar action on lands within their protection boundaries that are adjacent to National Forest lands.

Recommendation #5:

The Forest explore with the county the desirability of development of county ordinances relating to fire hazards and include removal of old structures which constitute a significant hazard.

Management Situation:

This fire burned through several thousand acres of private untimbered land covered with grass and shrubs inside the Forest protection boundary. These untimbered lands are not adjacent to timbered lands and under State law no funds are collected from the owners to provide fire protection.

This Forest and others in Washington have a history of expending federal monies in suppression of fires starting in or burning through private untimbered lands inside Forest Service protection boundaries without any means of collecting protection funds from the owners. The State law provides for a protection income from timbered lands or untimbered lands if they are a hazard and they are adjacent to timbered lands.

Recommendation #6:

The Region explore with the State of Washington their interpretation of existing State law pertaining to grass and brush lands adjacent to Forest land to make certain the Forests are using existing law to the maximum. If the existing law does not give adequate recognition to the fire hazard on untimbered lands that endanger National Forest land, explore with the State

the possibility of new law to require the landowners or public of Washington to pay a reasonable cost for services provided.

Management Situation:

A review of initial dispatch action of local forces was made and action was very prompt and within existing standards. However, there was some delay of 15 to 30 minutes in requesting jumpers from the Okanogan and air tankers from Wenatchee. Part of this was caused by several incoming phone calls by cooperators reporting the fire plus the time element in dispatching local District and adjacent District forces. The Forest has not developed a pre-attack and dispatch plan for individual blocks of land. At present, when a fire is reported the dispatcher has to think through all the actions required. He must quickly evaluate the topography, fuels, and burning conditions and dispatch according to this hurried evaluation setting priorities of dispatch. In a situation such as this it is probable he will overlook a proper action or get it out of priority.

Recommendation #7:

The Forest move rapidly to develop pre-attack planning and incorporate a dispatch plan into each pre-attack block. Cover adequate communication needs to ensure prompt action of all forces.

Management Situation:

Air tankers were not available for use at the time of discovery. The Forest Service lands in Washington plus many cooperators are all dependent upon the two air tankers located on the Forest at Wenatchee. Back-up tankers are available at times from other Forests in Oregon. The day of the origin of the 4th of July fire, the Bureau of Indian Affairs had a fire and requested use of the Wenatchee two air tankers. These two planes were flying for the Bureau of Indian Affairs at the time of discovery of the 4th of July fire.

The Bureau of Indian Affairs does not pay into the guarantee for air tankers but they do pay the standard use fee when used on their lands.

It has not been a practice to back-up air tankers dispatched from Wenatchee because of the long distance to other bases and the cost involved flying in back-up ships.

Air tankers were not placed into use until approximately one hour after the fire was discovered. At this time the tankers were not used as support to initial attack but they were used effectively holding some line along ridges. Several men involved in the initial attack believed that if the two air tankers would have been available and were dispatched promptly they would have stood a good chance of holding the fire for ground forces to contain the fire.

Since the time air tankers were originally assigned in eastern Washington the use has expanded to other agencies not computed originally. Bureau of Indian Affairs' lands are an example of this expanded use.

Recommendation #8:

The Region evaluate the dispersal of air tankers in the Region considering adjacent Regions' sources to determine if present day use and potential is reflected in present assigned location and numbers.

Recommendation #9:

The Forest develop a proposed guide for use of the two air tankers at Wenatchee providing for back-up under the more severe burning conditions or a restricted use by nonguarantee paying users of air tankers such as the Bureau of Indian Affairs. The proposed guide will be sent to the Region for approval prior to discussions with nonpaying members.

Management Situation:

One of the first to discover the fire was a cooperator watering a Forest Service road with a large tanker. This water tanker was being used in

conjunction with a Forest Service timber sale. The tanker operator first saw the fire in the cabin before the fire had spread outside the cabin. He had no pressure pump so he proceeded to lay water around the cabin as best he could with the regular road watering device, but it was not effective. The operator believed he stood a good chance of holding the fire to the immediate area of the building if he would have had a small pump and hose on the truck. The existing sale contracts do not provide for pumps for fire purposes on road watering vehicles.

Recommendation #10:

In areas where road watering is a standard practice in conjunction with road maintenance, the Region consider developing a standard provision for requiring a small pump and hose for use of water in fire suppression.

Management Situation:

Soon after the fire was discovered, the fire boss requested a spot forecast from the Weather Bureau. The request was given to the Weather Bureau without any ground information or weather conditions at the fire. The Weather Bureau knew a cold front was near the area and a wind shift was probable. However, they did not know if the wind shift had occurred or not at the fire. They mentioned winds could be expected from the west-northwest but did not give any special emphasis to this because they thought it had occurred at the fire. Within a few hours after discovery the wind shift arrived along with gusty conditions up to 40 miles plus. The fire spotted across canyon over one-quarter mile from the fire and within hours more than 10,000 acres were burned over. In this case prior knowledge of the shift by the fire boss would not have made any significant difference in final size of the fire because of the long distance spotting. In other fires it could.

Recommendation #11:

The Forest make certain the standard spot forecast form is completed with all ground fire and weather data when requesting spot forecasts from the Weather Bureau.

Management Situation:

Approximately 15 minutes after discovery one dozen jumpers were ordered from Intercity. The plane was delayed about 15 minutes because of failure of one motor to start. The jumpers arrived at the fire approximately one hour after discovery. The fire was about 20 acres in size at this time and moving rapidly up 4th of July Mountain. The jumpers could not jump safely at the head of the fire. The jump foreman informed the Forest dispatcher they could not jump safely on the front of the fire and that they were returning home. The fire boss was not contacted for orders. The jumpers could have jumped safely on other areas near the fire and could have been used on other portions of the fire. Their non use made no significant difference on this fire because of long distant spotting later in the day but their action was not in line with standard practices.

Recommendation #12:

The Region instruct all jump bases that instructions be received through the fire boss or District Dispatcher where no fire boss has arrived at the fire before leaving a fire. It is understood the jump leader will have the final decision as to whether or not a jump can be made safely at any specific location requested.

Management Situation:

The ground forces used on this fire which numbered nearly 900 in total were primarily organized crews from off Forest sources. Many were from sources outside the Region. Most of these crews were flown to and from the fire. It is possible this Forest and others in the Region have manpower sources

available that could be organized and trained before the fire season and could be used with less travel time and cost for transportation.

Recommendation #13:

The Forest and Region explore means of utilizing more local sources of manpower for project fire use.

Management Situation:

A two zone, G.H.Q. organization was established early on the second day of the fire. During the course of the next several days some confusion was experienced between G.H.Q. and fire zones on the role of each organization primarily in tactics and strategy. The Region has had little experience in G.H.Q. operations and fire overhead teams have had little training in this type of organization.

Local experienced Forest people were not utilized by incoming fire overhead to the degree they should have been. Many good qualified local fire people were not identified as to qualifications and potential use. Zone and G.H.Q. fire bosses did not request experienced local assistance to the degree they should have.

Needed overlap and orientation from a Forest fire organization to G.H.Q. organization was not given full recognition. There were too many golden hours lost in some cases in the transfer from one organization to another. In an instance or two, plans laid by the Forest overhead were not properly exercised by the incoming G.H.Q. and Zone teams.

Recommendation #14:

The Region provided needed training to Regional teams in operation of G.H.Q. fire organization.

Recommendation #15:

The Region train Regional fire teams and supervisors, and fire staffs on the Forest to recognize the need to integrate more local experienced people into

incoming fire organizations.

Recommendation #16:

The Region and Forest train Regional and Forest teams and fire staffs to recognize the need to provide smooth overlap when replacing fire bosses or teams. In conjunction with this training make certain all fire bosses understand fully they are working for the Forest Supervisor and many proper strategic fire decisions must be coordinated with the Supervisor or his representative.

Management Situation:

One zone on the fire had over 600 people working out of one fire camp. This camp was in a location that required fairly long travel times to some portions of the fire. Some road access was over narrow, dusty, long, low standard roads that slowed or delayed full utilization of ground forces in some instances. Proper sized and equipped vehicles to move people and supplies were very difficult to locate for use on the fire. This problem was finally overcome after a few days when army type vehicles were assigned to the fire. The logistical problems created by type of vehicle plus location of the fire camp did create a situation where some line workers were not as effective as they could have been.

Recommendation #17:

The Forest and Region in future training emphasize the need for full consideration of division sized camps well located around the perimeter of a large fire to increase the amount of time fire fighters can spend on the line.

Management Situation:

During the first night of the fire, several dozers were unable to work because of lack of light. Dozer lights are stored at the Forest Cache. When dozers are ordered out late in the afternoon it is not possible to get lights to the cats before darkness arrives.

Recommendation #18:

The Forest distribute sufficient dozer lights to District Caches to insure faster delivery on the fire lines.

Management Situation:

The Wenatchee has a 500-man Regional Cache for use primarily on all National Forests in Washington. From experience on this fire and past fires in Washington we find the size of this cache is too small. Many project fires such as 4th of July soon strip out available equipment and tools necessitating long hauls and delays bringing in material from Redmond or other sources. At the time of demobilization this same problem of costly long distant hauls is experienced.

Recommendation #19:

The Region analyze the size of fire caches and the past use history to determine if present facilities are stocked at proper size.

Management Situation:

The zone fire bosses had over 14 miles of back-up lines constructed with dozers. Out of this total, less than one-half mile was used. Past experience indicates that there has been a tendency on fires to construct

too many back-up lines where use was not based on good sound strategy.

Recommendation #20:

The Forest and Region discuss this problem in future fire training programs with fire teams to ensure that back-up lines are put in only when based on sound strategic plans.

Management Situation:

There were nine air tankers, six helicopters, and several lead planes and other air reconnaissance planes used on the fire. During some periods of the fire there were eight or more planes in flight over the fire simultaneously. The air attack boss was not advised or consulted and many of the flights did not have his approval. Consequently he could not coordinate the air operation properly.

Recommendation #21:

The Region and Forest give special emphasis in future training for proper use of aircraft and the coordination required with air attack boss. Air attack bosses to receive special training on this phase of their job.

Management Situation:

The fire burned through approximately 3,000 acres of contiguous Forest Service timber stand improvement and logging slash rated as E E or E H on the third day of the fire. Only minor amounts of slash disposal had been planned and accomplished. The burning index at the time was estimated to be above 40, and it is the belief of most fire people on the line the fire would have covered the same area if no slash had been present. However, observation of the area by Fahnestock of the Pacific Northwest Forest and Range Experiment Station indicated a significant increase in energy release was experienced

which appeared to cause a measurable increase in tree mortality in some areas. Fresh logging slash on part of the area also made line construction and holding very difficult and more time consuming.

Recommendation #22:

The Forest develop a slash abatement policy within the Regional guides which will provide for reduction of fuel hazards to a tolerable level.

Management Situation:

Under the present system of cost accounting, it cost the Forest Service an estimated $5,000 to compute the costs involved in suppression for the fire analysis. Each Forest in the Region had to determine costs experienced from this fire by their people or equipment. Fire costs at present are not available through modern computer or ADP systems.

Recommendation #23:

The Region consider a means of using ADP systems in determining fire costs for fire analysis and fire reimbursement.

A. C. WRIGHT
Forest Supervisor

UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE

Region 6
P.O.Box 3623,Portland,Oregon 97208

REPLY TO: 5190 Management April 10, 1969

SUBJECT: Fire Analyses of 1968 Fires

TO: Forest Supervisors and Division Chiefs

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   b. Changing present method of determining and using Buildup.

   c. Modifying guidelines for determining herbaceous stage.

   Fire Control to consider by July 1969

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   b. Contacting county courts and exploring possibility of developing county ordinances relating to special hazards.

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   Forests to work with owners and counties by March 1970

   Fire Control to work with States and others by March 1970

3. Move as quickly as possible to a preplanned dispatch system Regionwide. Plan to consider fuels, burning conditions, and priority of dispatch:

   Forests to consider by July 1969

4. Broaden training base to make certain that every employee that works in the woods is trained in being careful with fire and in basic firefighting fundamentals. Refer to FSM 5134.03 - Policy and R-6 Supplement No. 33 for authority to give basic fire training to all new men and charge costs to whatever appropriation and activity the men are financed under.

   Forests to do by July 1969

5. Develop a dispatch priority for all inter-Forest fire control facilities. Give consideration to maintaining coverage to areas depending on these facilities during periods of high fire danger.

   Fire Control to do by July 1969

6. Emphasize training of line and general scouts in overhead training sessions. Use ground scouts to supplement aerial scouting on all fires.

   Forests to train by July 1969

7. Consider some type of intensive detection of high risk areas during periods of severe burning conditions to pick up sleeper fires while small.

   Forests to list helicopters or other means of intensive detection for high risk areas in their Manning and Action Plans by July 1969

   Fire Control to investigate feasibility of obtaining simplified, inexpensive infrared scanner equipment by March 1970

8. Emphasize organizing and training all local manpower for use on fires. Investigate sources such as summer schools, summer camps, farm workers, loggers, and other industrial crews. Use these before calling for help from distant, outside sources.

   Forests to organize and train by July 1969

9. Use more local experienced personnel in Top Overhead teams. Positions such as Fire Behavior Officer, Line and General Scouts, and Maps & Records Officers should be filled by locals.

   Forests to do during 1969 Fire Season

10. Re-emphasize use of division-sized fire camps well located around the perimeter of large fires to avoid the confusion and delays that result from large camps.

    Forests to emphasize in overhead training by July 1969

11. Discourage construction of <u>backup firelines</u> except under very unusual conditions.

    Forests to cover in training sessions by July 1969

    Fire Control to inspect performance during 1969 Fire Season

12. Analyze present size and location of fire caches to see if they best meet Regional needs. It is very costly to return tools and equipment to Redmond from Northern Washington Forests for storage and reconditioning.

    Fire Control to do by July 1969

13. Train Service personnel in preparation of frozen meals and investigate ways to make more economical use of this facility.

    Forests to train in preparation by July 1969

    Fire Control to investigate possibilities of bulk serving and obtaining more variation in meal contents by July 1969

14. Provision should be made to supply fire crews with double lunches or C-rations so there will be no delay in getting on the line if the fire camp is not prepared to serve meals when the men arrive.

    Forests to do during 1969 Fire Season

15. Make it clear to smokejumper bases that the decision whether or not to jump on fires must be made by the Fire Boss on the ground unless there is a question of safety in jumping.

    Fire Control to do by July 1969

16. Liaison Officers must be assigned quickly whenever fires appear likely to burn on both sides of a protection boundary.

    Forests to do during 1969 Fire Season

17. Consider developing and maintaining joint manpower and equipment boards when two protection agencies are depending on the same firefighting resources.

    Forests to do by July 1969

18. Adopt a Service requirement to return all crew-carrying vehicles to camp after they deliver men to the fireline.

    Forests to emphasize in training by July 1969

    Fire Control to cover on inspection trips during season

19. Develop a procedure for alerting Top Overhead teams to avoid long assembly delays when their services appear eminent.

    Fire Control to do by July 1969.

20. Consider developing a standard provision in contracts requiring a small pump and hose for use on roadside fires where water sprinkling is common practice in road maintenance.

    Fire Control to do by July 1969

21. Conduct training in the operation of a GHQ organization.

    Fire Control to do by July 1969

22. Provide time for smooth overlap when replacing Fire Bosses and teams. New overhead must be thoroughly briefed and made completely familiar with conditions.

    Forests to do during 1969 Fire Season